



08/2011

Exercise Sciences 416 Fall Semester 2011

Section 1: 37 SFH on M W F at 09:00 am - 09:50 am

Instructor: Mike Diede **Mobile Phone:** 801-735-2849
Office: 274 SFH **Home Phone:** 801-491-7562
Office Hours: TTh 9–10; MW 4–5; Drop by as needed
Office Phone: 801-422-2145
Email: mike_diede@byu.edu

Description

Basic principles of injury evaluation; evaluation techniques specific to lower-extremity injuries.

Prerequisites

Prerequisite: admission to athletic training program.
ExSc 320,321

Texts & Materials

Required

	Vendor	Price (new)	Price (used)
Evaluation of Orthopedic and Athletic Injuries. ((3rd ed.) By Starkey, C and Ryan, J Philadelphia, PA: F.A. Davis (2002.)			
Special Tests for Orthopedic Examination (2-3) By Konin, JG, Wiksten, DL and Isear, JA Jr. Thorofare, NJ: Slack, Inc., (2002)	n/a	n/a	n/a

Optional

	Vendor	Price (new)	Price (used)
HANDBOOK (2nd edition) By Starkey, C. Brown, S. Ryan, J (2002) Optional	n/a	n/a	n/a
Special Tests for Neurologic Examination By Scifers, J Thorofare, NJ: Slack, Inc., (2008) Optional	n/a	n/a	n/a
Arnheim's Principles of Athletic Training (12-13) By Prentice, W.E McGraw-Hill Companies, Inc EXSC 320 book	n/a	n/a	n/a
Physical Examination of the Spine and Extremities. By Hoppenfeld, S Norwalk, CT: Appleton - Century - Crofts (1976)	n/a	n/a	n/a
Orthopedic Physical Assessment (3rd edition) By Magee, DJ. Philadelphia, PA: W.B. Saunders (1997) EXSC 460 Book	n/a	n/a	n/a
Primal Pictures: Sports Injury Series By (Check-out in the LRC) SFH 194 Not a text but a reference	n/a	n/a	n/a
Lower Extremity Injury Evalaution By Wilksten (Check-out in the LRC) SFH 194 Optional	n/a	n/a	n/a
Gait and Gait Analysis By Perry/ Brown (Check-out in the LRC) SFH 194 Optional	n/a	n/a	n/a

Classroom Procedures

Make-up and Late work: Generally, no make-up exams are given, unless prior arrangements have been made. Late work will be penalized with a 20% grade reduction. All work must be made up as the AT program is competency based.

Labs: The lab component for this course occurs during regularly scheduled class time. The lab is used to practice the skills taught in the lecture and to evaluate the application of athletic training competencies and proficiencies. Lab generally occurs in the SFH AT room, 1130.

Lab Dress: On days where we go to the Lab for taping evaluation practice or technique, gym/workout clothes should be worn. (This includes shorts and a t-shirt or sweats.) Clothes should be loose fitting so evaluation of range of motion can be observed. Every effort to maintain modesty will be made during labs. The BYU honor code will be followed even during lab.

Clinical field experience or clinical rotation: Your clinical instructor will give a grade based upon their evaluation. Your grade for your competency and proficiency acquisition will be based on your hours, folder materials, module completion and evaluations connected to this course. See Exsc 394 syllabus.

Athletic Training Portfolio: This compilation of relevant material should represent relevant materials you have begun to build into a professional athletic training file, i.e., athletic training plans, labs, evaluations, skill subset and procedures/parameters. SOAP notes and Injury evaluations. Documents, forms, contracts, plans both in paper form and electronic should be kept in your AT folder or Blackboard or personal computer.

Grading Policies

Use of Blackboard (online course management):

This course is supplemented by the use of Blackboard. Assignments including abstracts, journals and occasionally a quiz will be submitted online to Blackboard. Additionally students will have access to the syllabus, handouts and PowerPoint presentations as well as the ability to review current grades on blackboard.

Learning Outcomes

- **Instructing and Interpreting Fitness Tests**

Instruct the patient how to properly perform fitness tests to assess his or her physical status and readiness for physical activity. Interpret the results of these tests according to requirements established by appropriate governing agencies and/or a physician. These tests should assess: Muscular Endurance, Agility, Speed.

- **Appropriate Fitness Programs for Patients**

Develop a fitness program appropriate to the patient's needs and selected activity or activities that meet the requirements established by the appropriate governing agency and/or physician for enhancing: Cardiovascular Endurance, Speed

- **Inspection/Observation of the Clinical Signs Associated with**

Perform inspection/observation of the clinical signs associated with common injuries including deformity, posturing and guarding, edema/swelling, hemarthrosis, and discoloration. Palpate the bones and soft tissues to determine normal or pathological characteristics. Measure the active and passive joint range of motion using commonly accepted techniques, including the use of a goniometer and inclinometer. Grade the resisted joint range of motion/manual muscle testing and break tests. Apply appropriate stress tests for ligamentous or capsular stability, soft tissue and muscle, and fractures. Apply appropriate special tests for injuries to the specific areas of the body as listed above. Assess neurological status, including cranial nerve function, myotomes, dermatomes and reflexes, and circulatory status. Document the results of the assessment including the diagnosis.

- **Patient's Prior and Present Medical History**

Obtain a medical history of the patient that includes a previous history and a history of the present condition. Perform a visual observation of the clinical signs associated with common injuries and/or illnesses including deformity, edema/swelling, discoloration, and skin abnormalities. Palpate the bones and soft tissues, including the abdomen, to determine normal or pathological characteristics.

- **General Course Outline**

1. Introduction/Course Requirements
2. General Principles and Concepts B steps in assessment/constructing good histories/diagnostic terminology testing/ancillary testing
3. Pre-Season Evaluation – Postural Assessment
4. Soft Tissue and Bone Injury Classification
5. Foot/Ankle Injuries
 - A. Lab
6. Lower Leg Injuries
 - A. Lab
7. Knee Injuries
 - A. Lab
8. Thigh/Hip Injuries
 - A. Lab
9. Gait
 - A. Lab
10. Spine/Low Back Injuries
 - A. Lab

Grading Scale

A	94-100	B-	80-83	D+	67-69
A-	90-93	C+	77-79	D	64-66
B+	87-89	C	74-76	D-	60-63
B	84-86	C-	70-73	E	59 and lower

Assignment Descriptions

Abstracts: Article Reports:

Five (5) half-page journal abstracts are required for this course. Your **TYPED, half- page** response is worth 10 points each. Abstracts should be half-page in length, citing relevant information from the article. The following areas should be included, covered and explained in your abstracts;

Introduction/ theory/ hypotheses, variables or measurement (independent and dependent) methods (what was the experiment), results and conclusions. Write these like a book report to someone who does not know this subject (Mom). The actual research article abstract is a good example of how to write your abstract. Do not write an abstract of an abstract however! The article must be properly referenced at the top of the page. You may choose any citation style you like (APA, AMA). The article must be from a current and reputable journal in the field of sports medicine. Examples: Journal of Athletic Training, Physician and, Medicine and Science in Sport and Exercise, JOSPT, JAMA. The articles must have been published within the last three years. You must also include a copy of the article or link in Blackboard. Abstracts should help you write your term paper. Submit abstracts to the appropriate Blackboard discussion.

Abstract Response: (5 points each response):

To be awarded these points you will respond to two of your classmates abstracts with intelligent and thoughtful and helpful and critical comments. Your response needs to be long enough to show you have read the abstract and perhaps the original article. Your response may include a question for the author of the abstract and will hopefully illicit conversation among all of us.

Term Paper:

This is a critical topic paper related to the lower extremity. General guidelines; 5-10 pages of typed double spaced sentences in paragraph format, excluding title page and reference page. You will write a draft and final copy. There are 50 points minimum for the draft and 50 for the final paper. I will indicate your final total grade on the draft if no corrections or changes are made. You may choose to accept the grade on the draft in lieu of resubmission. The DRAFT is a paper copy, stapled only. Do not bind in any way. Final paper submission is on Blackboard. References must be cited and in the format of your choice. I'm glad to read one rough draft prior to draft submission. Due on Blackboard the last day of Finals at 5:00pm.

Journals (10 points each):

All athletic training students in ExSc 416 are required to keep a reflective journal. This will be a recording of situations during clinical experiences. Rather than making a brief listing of clinical experience events, develop your thoughts as fully as possible. This is an opportunity to share with faculty and clinical instructors, the application of principles, theory, and research. Write a journal entry describing ANY clinical incident you found significant. I will periodically assign specific journal topics, including SOAP notes reports.

Describe what athletic training interventions occurred.

Describe the decision-making process.

Identify previously learned knowledge/clinical experiences that helped you.

Describe resources you identified and/or utilized and your rationale.

Describe the application of concepts, theories, or research you discussed in class as you move from theoretical to clinical practice.

Describe your thoughts, feelings, and perceptions.

Describe any ethical situations/dilemmas.

Describe any interactions/experiences with other health care providers.

Describe what you would do differently when a similar incident occurs.

You will be required to submit a journal entry each time it is due, by Friday at midnight. This journal entry will be submitted to Blackboard under discussion topic designated by the instructor. Students are welcome to use the discussion board at anytime to ask questions, collaborate, or discuss course material. If you ever have an entry that you would like to keep confidential please send it via email to the instructor; mike.diede@byu.edu

Journal Response: (5 points each response):

To be awarded these points you will respond to one of your classmates submissions with thoughtful and helpful comments. Your response may include a question and will hopefully illicit conversation among all of us. Confidentiality and sensitivity of all posts must be maintained. Due: See Syllabus Dates.

Quizzes and Exams: :

Following content listed on the schedule and **most Wednesdays**. Each quiz or exams will include a variety of types of items and be worth approximately 10 points or as designated.

Oral Practical exams will require demonstration of athletic training techniques. These exams may occur in class or during clinical experience time. I will visit you at your clinical sites and hope to involve your clinical instructor as an examiner.

Final Exam: comprehensive OP exam on **the scheduled Final Exam period**. Written exam is in the BYU testing center, all week. A take home essay is likely.

Point Breakdown

Assignments	Points
Abstractions 5 (10pt each)	50
Abstract Responses (blackboard)	25
Term paper 50 (Draft); 50 (Final)	100
Journals (every other week) (5–10)	100
Journal responses	50
Quizzes (10–25 pts each)	100
Mid-Term – Written	100
Oral/Practical Exams (4) 50 pts each	200
O/P Final	100
Final Written Exam (comprehensive)	100
Total Points	925

Course Schedule

Date	Topics	Assignments
M Aug 29	Introduction: Overview of the Course. CH 1, 2, 3 REVIEW special tests and posture Friday: Lab day.	Journal 1 (Student Introductions): Due Friday at midnight
M Sep 5	Labor Day – No Class	-
W Sep 7	Nomenclature: CH 4: Posture and Gait CH 6-7 Lab, Friday.	Quiz 1
M Sep 12	Review Chapters 1-7	Abstract 1 and Journal 2: Due Friday midnight
W Sep 14	Focus on Chapter 3	-
F Sep 16	Lab: Review ROM measurement and Gait	-
M Sep 19	CH 8 – Foot - Toes, page 157	<i>Prep for op exam</i>
M Sep 26	CH 9 – Ankle and LL	<i>O/P exam 1, all week</i>
W Sep 28	Quiz 2	-
F Sep 30	LA: Foot through Lower Leg	Abstract 2 (Friday midnight)
M Oct 3	CH 9 continued (review)	Journal 3: due at midnight Friday
F Oct 7	-	Journal 3 Due
M Oct 10	CH 10- Knee	-
W Oct 12	-	Knee Quiz
F Oct 14	Lab	-
M Oct 17	CH 11 Patellofemoral	<i>O/P exam 2, all week</i>
W Oct 19	Quiz 3	-
F Oct 21	Lab	Journal 4: due at midnight
M Oct 24	CH10-11: Knee Lab and review	MID term exam (Testing Center)
F Oct 28	-	<i>Abstract 3, (midnight)</i>
M Oct 31	CH 12: Pelvis and Thigh	<i>O/P exam 3, all week</i>
F Nov 4	Lab	Journal 5: due at midnight
M Nov 7	CH 12: Pelvis Continued	Journal 6 (maybe)
W Nov 9	-	Quiz 4
F Nov 11	-	<i>Abstract 4</i>
M Nov 14	CH 12: Thigh	-
F Nov 18	Lab; First draft of term paper	Term paper Due in class
M Nov 21	Monday Class	-
W Nov 23	No Class – Thanksgiving Holiday	-
M Nov 28	CH 13: Thoracic and Lumbar Spine	<i>O/P exam 4, all week ; Journal 7?</i>
W Nov 30	-	Quiz 5
F Dec 2	Lab	-
M Dec 5	Last week of class: Semester Review	-

Course Competencies: 416

- RM-C1 Explain the risk factors associated with physical activity.
- RM-C2 Identify and explain the risk factors associated with common congenital and acquired abnormalities, disabilities, and diseases.
- RM-C13 Identify and explain the various types of flexibility, strength training, and cardiovascular conditioning programs. This should include the expected effects (the body's anatomical and physiological adaptation), safety precautions, hazards, and contraindications of each.
- RM-C18 Explain the principles and concepts related to the fabrication, modification, and appropriate application or use of orthotics and other dynamic and static splints. This includes, but is not limited to, evaluating or identifying the need, selecting the appropriate manufacturing material, manufacturing the orthosis or splint, and fitting the orthosis or splint.
- RM-P1 Instruct the patient how to properly perform fitness tests to assess his or her physical status and readiness for physical activity. Interpret the results of these tests according to requirements established by appropriate governing agencies and/or a physician. These tests should assess:
 - RM-P1.4 Muscular Endurance
 - RM-P1.5 Agility
 - RM-P1.7 Speed
- RM-P2 Develop a fitness program appropriate to the patient's needs and selected activity or activities that meet the requirements established by the appropriate governing agency and/or physician for enhancing:
 - RM-P2.6 Cardiovascular Endurance
 - RM-P2.7 Speed
- DI-C2 Describe the anatomical and physiological growth and development characteristics as well as gender differences across the lifespan.
- DI-C4 Explain directional terms and cardinal planes used to describe the body and the relationship of its parts.
- DI-C5 Describe the principles and concepts of body movement including functional classification of joints, arthrokinematics, normal ranges of joint motion, joint action terminology, and muscle groups responsible for joint actions (prime movers, synergists), skeletal muscle contraction, and kinesthesia/proprioception.
- DI-C6 Describe common techniques and procedures for evaluating common injuries including taking a history, inspection/observation, palpation, functional testing, special evaluation techniques, and neurological and circulatory tests.
- DI-C7 Explain the relationship of injury assessment to the systematic observation of the person as a whole.
- DI-C8 Describe the nature of diagnostic tests of the neurological function of cranial nerves, spinal nerves, and peripheral nerves using myotomes, dermatomes, and reflexes.
- DI-C9 Assess neurological status, including cranial nerve function, myotomes, dermatomes and reflexes, and circulatory status.
- DI-C10 Explain the roles of special tests in injury assessment.
- DI-C11 Explain the role of postural examination in injury assessment including gait analysis.
- DI-C12 Describe strength assessment using resistive range of motion, break tests, and manual muscle testing.
- DI-C13 Describe the use of diagnostic tests and imaging techniques based on their applicability in the assessment of an injury when prescribed by a physician.
- DI-C15 Describe and identify postural deformities.
- DI-C17 Describe the components of medical documentation (e.g. SOAP, HIPS and HOPS).
- DI-P2 Perform inspection/observation of the clinical signs associated with common injuries including deformity, posturing and guarding, edema/swelling, hemarthrosis, and discoloration.
- DI-P3 Perform inspection/observation of postural, structural, and biomechanical abnormalities.
- DI-P4 Palpate the bones and soft tissues to determine normal or pathological characteristics.
- DI-P5 Measure the active and passive joint range of motion using commonly accepted techniques, including the use of a goniometer and inclinometer.
- DI-P6 Grade the resisted joint range of motion/manual muscle testing and break tests.
- DI-P7 Apply appropriate stress tests for ligamentous or capsular stability, soft tissue and muscle, and fractures.
- DI-P8 Apply appropriate special tests for injuries to the specific areas of the body as listed above.
- DI-P9 Assess neurological status, including cranial nerve function, myotomes, dermatomes and reflexes, and circulatory status.
- DI-P10 Document the results of the assessment including the diagnosis.
- MC-C3 Describe common techniques and procedures for evaluating common medical conditions and disabilities including taking a history, inspection/observation, palpation, functional testing, special evaluation techniques (e.g., assessing heart, lung and bowel sounds), and neurological and circulatory tests.
- MC-P1 Obtain a medical history of the patient that includes a previous history and a history of the present condition.
- MC-P2 Perform a visual observation of the clinical signs associated with common injuries and/or illnesses including deformity, edema/swelling, discoloration, and skin abnormalities.
- MC-P3 Palpate the bones and soft tissues, including the abdomen, to determine normal or pathological characteristics.

- AC-C6 Differentiate the components of a secondary assessment to determine the type and severity of the injury or illness sustained.
- AC-C22 Identify the signs and symptoms of trauma to the cervical, thoracic and lumbar spines, the spinal cord, and spinal nerve roots, including neurological signs, referred symptoms, and other symptoms that indicate underlying trauma and pathology.
- EX-C4 Describe the appropriate selection and application of therapeutic exercises taking the following into consideration:
 - EX-C4b The physiological effects of inactivity and immobilization on the musculoskeletal, cardiovascular, nervous, and respiratory systems of the human body
 - EX-C4c The anatomical and/or biomechanical alterations resulting from acute and chronic injury and improper mechanics

Librarian Information

Name: Richard Jensen
Office: 2324 [HBL](#)
Phone Number: 422-6012
Email: richard_jensen@byu.edu

Reference Desk Information

Name: Social Sciences / Education
Phone Number: 422-6228
Email: [No library information available](#)
Hours: M-Th : 8am-9pm; F: 8am-6pm; Sat: 10am-6pm

Department Research Information

<http://guides.lib.byu.edu/content.php?pid=60593>

E-reserve Information

<http://www.lib.byu.edu/reserve.html>

Department and University Policies

Use of Technology in the Classroom

Technology is an essential part of today's learning environment. However, technology, when used inappropriately, can also hinder learning. Most students have, at some point, sat next to students who use their laptops or PDAs in class to check e-mail, talk to friends, instant message, search the internet, or play on-line games. Unfortunately, every person sitting around such students is distracted by this behavior and classroom learning decreases. As a result of these distractions, the Department of Exercise Sciences has the following policy:

Using laptops or PDAs in class to legitimately take notes or work on class projects is allowed, but all other use of laptops, PDAs, or other electronic devices in class is prohibited.

Please respect your fellow students and professors and abide by this department policy (and courtesy). This would naturally include not reading newspapers, doing work for another class, or other potentially disruptive activities not associated with the class in session.

Cell Phones

Students are not allowed to use cell phones in classes. Please turn them off as you enter the classroom and keep them stored out of sight in your backpack, purse, or pocket.

BYU Honor Code

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and my own expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 801-422-2847 if you have questions about those standards.

Preventing Sexual Discrimination and Harassment

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education. Title IX covers discrimination in programs, admissions, activities, and student-to-student sexual harassment. BYU's policy against sexual harassment extends not only to employees of the university, but to students as well. If you encounter unlawful sexual harassment or gender-based discrimination, please talk to your professor; contact the Equal Employment Office at 801-422-5895 or 801-367-5689 (24-hours); or contact the Honor Code Office at 801-422-2847.

Students with Disabilities

Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact the University Accessibility Center (UAC) (801-422-2767). Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities. Services are coordinated with the student and instructor by the UAC. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures by contacting the Equal Employment Office at 801-422-5895, D-285 ASB.

Academic Honesty Policy

The first injunction of the BYU Honor Code is the call to be honest. Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life's work, but also to build character. President David O. McKay taught that 'character is the highest aim of education' (The Aims of a BYU Education, p. 6). It is the purpose of the BYU Academic Honesty Policy to assist in fulfilling that aim. BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating, and other academic misconduct.